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# MEMORANDUM

**To:** Tony Mazzella and Jennifer Wieland, SDOT

Thomas Brennan

Date: February 15, 2011

**Subject:** Transit Master Plan Evaluation Framework

The following memorandum is intended to guide an internal discussion about an evaluation framework for the Transit Master Plan, which will inform investment decisions that are scalable to funding availability. This evaluation framework is a Transit Master Plan (TMP) Phase One deliverable, which describes the evaluation process that will be conducted primarily during Phase Two of the TMP. The memo includes the following:

- A review of adopted Transit Master Plan goals (adopted through resolution 31238 regarding the Transit Master Plan, which provides a long-term vision for improving the transit system serving the city over the next 20 years)
- A brief summary of desired outcomes from the TMP stakeholder goal setting process conducted in October 2010
- A proposed evaluation framework

# **Transit Master Plan Goals**

The vision for the TMP is to recommend policies, programs, and investments resulting in a high-quality transit system to make it easier and more desirable for people to take transit. Quality transit includes fast and reliable service that is safe, comfortable, and accessible for all users, providing the greatest degree of mobility and access possible with the appropriate technology. Consistent with broader transportation system goals, the TMP will be a critical tool to accomplish the following goals:

- Make riding transit easier and more desirable in order to effect a mode shift;
- Use transit to create a transportation system responsive to the needs of vulnerable populations and those for whom transit is a necessity (e.g., transit-dependent individuals, youth, seniors, people with disabilities, low income populations);
- Use transit as a tool to meet Seattle's sustainability, growth management, and economic development goals;
- Create great places at locations in neighborhoods where modes connect to facilitate seamless integration of the pedestrian, bicycle, and transit networks; and
- Balance system implementation with fiscal, operational, and policy constraints.

Other important considerations are goals set through the Seattle Transit Plan (2005), King County Regional Transit Task Force recommendations, King County Metro goals detailed in the *Comprehensive Plan for Public Transportation (2007)*, and Sound Transit's mission and related measures of success.

#### Stakeholder Feedback

A series of workshops with the Interagency Technical Advisory Team (ITAT) and the Transit Master Plan Advisory Group (TMPAG) helped to determine desired outcomes for the TMP. The most important TMP outcomes identified by these groups—and supported through stakeholder interviews and a web survey—include:

- Transit is a travel option of first choice
  - Fast, frequent, and reliable service should be available between all urban centers and villages
  - Transit should be a viable travel option all day, not just at peak hours (i.e., transit should provide more competitive travel options for more trips)
- Auto travel is reduced
  - Seattle per capita vehicle miles travelled should be cut substantially as transit becomes more competitive
- Seattle funding priorities support transit
  - Seattle should continue to prioritize critical street design improvements that support transit speed and reliability and enhance pedestrian access
  - Seattle should evaluate ways to increase transit funding for operations and capital development
- Vibrant neighborhoods are places where people walk and ride
  - City of Seattle land use planning should consider transit investments (current and planned) as a guide for allocating and managing future growth
- Better connections are made to regional neighbors
  - The TMP should recognize Seattle's role as part of a region, including the need for access to and from other regional destinations
- Communities receive equitable investment and benefits
  - o Transit investment priorities should consider social and geographic equity
  - Providing low-cost transit options to transit dependent populations<sup>1</sup> should remain a core focus of the transit system
- Greenhouse gas reduction (GHG) goals are met
  - Transit should be at the core of an environmentally sustainable transportation system

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<sup>&</sup>lt;sup>1</sup> Transit dependent populations include people who rely on transit for mobility due to physical conditions that prevent them from driving, for reasons of limited income or lack of auto availability, or as a matter of choice.

## **TMP Evaluation Framework**

The Transit Master Plan will identify priorities for service and capital investments in the transit system that best achieve adopted TMP goals in balance with other modal priorities.

To support this decision process, the TMP consulting team proposes a multi-stage evaluation process that is rooted in the goals and builds upon outreach and technical analysis completed in Phase One of the project.

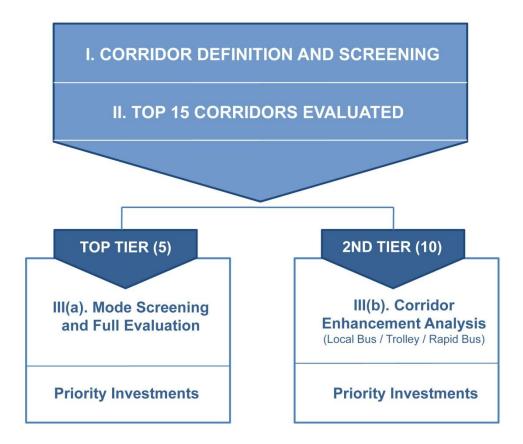
The 2005 Seattle Urban Village Transit Network (UVTN) will be the base network for corridor evaluation, but the identified corridors will not be limited by the UVTN. Corridor options will be identified based on existing route patterns, projected population and employment growth, and travel demand patterns identified in the Travel and Transit Market Analysis. A primary distinction between this analysis and the UVTN work done in the 2005 Seattle Transit Plan is that this work will identify and evaluate transit corridors that connect multiple markets and will consider service design opportunities and constraints. In contrast, the UVTN sets a framework for measuring performance on important arterial corridors that connect urban centers and villages, but it provides limited direction in developing, prioritizing, and managing operable, end-to-end transit corridors.

### **Evaluation Approach**

This memorandum outlines the proposed approach to identifying and prioritizing corridors for evaluation and for evaluating top tier and second tier corridors to develop capital investment recommendations.

Figure 1 illustrates the basic flow of three proposed evaluation stages. Stage I will be completed during Phase One of the TMP and will define a set of corridors for analysis and a framework for prioritizing capital, operating, and supporting programmatic improvements to transit in those corridors. Stage II and Stage III of the evaluation will undertake the detailed evaluation and prioritization of corridors, analysis of mode options for top priority corridors, and evaluation of other system improvements. Stages II and III will be completed in Phase Two of the TMP.

Figure 1: Evaluation Stages I, II, and III



### **Evaluation Stage I: Corridor Screening**

A preliminary set of transit corridors has been identified based on (1) the UVTN corridors and performance, (2) King County Metro (KCM) route structure and performance, and (3) the City of Seattle street network and classifications.

Figure 2 illustrates a set of broad travel corridors recommended for Stage I screening. Each broad travel corridor defines a set of associated market connections. These corridors represent the basic building blocks for corridor analysis. However, to accurately assess corridor potential, more detailed pathways for transit must be examined. Therefore, Figure 3 illustrates one or more travel pathway options for each corridor; these pathways are identified to guide elements of the analysis that require measurement of land use or right-of-way conditions. (NOTE: This is an initial cut at a long list of potential pathways. We expect additional iterations of the pathways before analysis begins and following an initial analysis of Stage I criteria.)

Corridors with built or funded light rail transit will be treated as existing high capacity transit investments. However, local transit needs in these corridors will be considered because regional high capacity transit investments are not designed to serve short, local trip demands.



FIGURE 3: Citywide Corridors Travel Pathway Options for Evaluation



Stage I analysis will evaluate the full list of corridor pathways illustrated in Figure 3 based on the screening criteria described in Figure 4. These criteria are heavily focused on corridor potential to generate ridership, primarily using current and future land use and demographic characteristics. This evaluation will screen out corridors that are least likely to deliver significant return on transit investments within the plan timeframe (2030).

Figure 4: Stage I Corridor Evaluation Criteria and Measures

Evaluation Criteria	Measure	Methods
Existing ridership and productivity	Boarding rides in corridor	Peak and off-peak corridor level analysis of 2009 King County Metro route performance
Ridership potential (current land use)	2008 land use supportiveness	Evaluation of combined 2008 population + employment density in ¼-mile buffer around corridor
Future ridership potential (2030 land use)	2030 land use supportiveness	Evaluation of combined 2030 population + employment density in ¼-mile buffer around corridor
Benefits to vulnerable communities	Service to areas with higher than average concentrations of people with low incomes, people with disabilities, and people who depend on transit (whether by need or choice)	Percentage share [within ¼-mile catchment] based on transit dependency index (seniors, persons with disabilities, and low income populations)
	Service to low car ownership areas (controlling for duplication noted above as a low income indicator)	Percentage share [within ¼-mile catchment] based on auto availability index
Potential for travel time savings	Potential for travel time improvement (% change in corridor travel time) given physical conditions	Qualitative assessment that considers: (1) speed treatments completed in corridor to date and (2) traffic volumes vs. lane capacity
Anchor/generator strength	Presence of major institutions, high visitation cultural/recreational sites, large CTR affected employers (>500 employees), and Transportation Management Plan affected buildings	Qualitative assessment of anchor and generator strength based on number and size of generators in corridor
	Presence of paid parking in corridor/parking cost	Areas/neighborhoods with paid on-street parking; average parking cost and percent of corridor with paid parking (off-street parking price data is not available for the entire city)
Urban and commercial centers	Presence of retail and neighborhood activities as nodes, main streets, or shopping centers	Identification and qualitative assessment of the number, size, and importance of these activity nodes, as distinct from the stand-alone attractors noted above

Approximately 15 corridors will be selected for Stage II analysis. Quantitative analysis will also help to inform a logical break point for corridors that enter Stage II. There may be natural breaks that suggest a slightly higher or lower number of corridors be carried forward.

Stage I screening will consider the strengths of individual segments of identified corridor pathways. It is possible that consideration of individual segments in Stage I will lead to reconsideration of the corridor pathways that are included in Stage II analysis.

Following Stage II analysis, the top tier (3-5) corridors will undergo modal analysis, which will include evaluation of the appropriate high capacity transit mode for each corridor. The remaining corridors will be evaluated for enhancements to bus operations, access, and passenger experience as well as associated community development opportunities (e.g., speed and reliability improvements, route branding, wayfinding, passenger amenity improvements, pedestrian and bicycle access improvements). Placing fiscally reasonable constraints on the number of corridors evaluated for capital investment will help to focus prioritization and implementation.

# **Comparative Analysis**

Where quantitative data are available from a criterion evaluation, natural data breaks will be used in the scoring process to assign a score between beneficial and adverse impact, as shown in Figure 5. For qualitative criteria, methodologies will be developed to determine scoring using the same scale. Where appropriate, a criterion will be rated against a baseline condition. This scoring method will apply to all three stages of analysis.

Figure 5: Criterion Scoring Method

Assessment	Natural data break	Rating
Significant benefit	4th	3
Moderate benefit	3rd	2
Slight benefit	2nd	1
Neutral	1st	0
Slight constraint/adverse impact	2nd	-1
Moderate constraint/adverse impact	3rd	-2
Significant constraint/adverse impact	4th	-3

### **Evaluation Stage II: Multiple Account Evaluation**

The Stage I process will provide a first-level screening of candidate investment corridors, based in large part on their ridership potential. The top 15 to 20 corridors identified will move into Stage II. The consultant team proposes a multiple account evaluation (MAE) approach be applied in Stage II.

A multiple account evaluation is an outcome (goal) driven approach to identifying capital and transit service investments that support the Transit Master Plan goals. Evaluation criteria that

support adopted TMP goals are measured using quantitative and qualitative approaches, allowing a robust discussion about priorities and tradeoffs. The MAE approach is not intended as a weighted evaluation process that dictates "the answer;" rather it is a method for comparing important information to facilitate informed decision making.

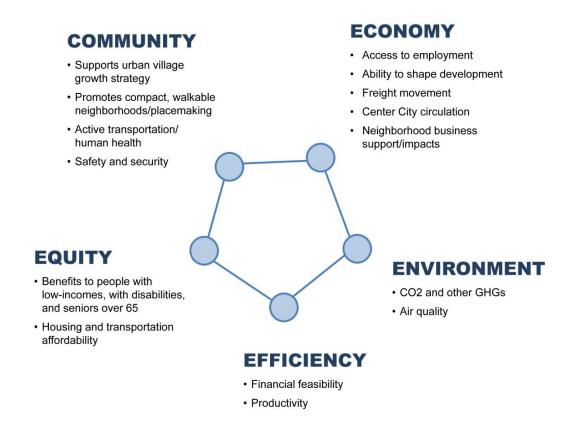
The MAE approach captures key goals in a limited number of evaluation "accounts" or categories of evaluation criteria. The team proposes that potential transit investments be measured using five accounts, which link to the Transit Master Plan goals adopted by Resolution 31238. Figure 6 illustrates how the adopted TMP goals correspond with the proposed evaluation accounts.

Figure 6: TMP Goals and Evaluation Accounts

Transit Master Plan Goal	Evaluation Account	
Make it easier and more desirable for people to take transit	Efficiency	MP Priorities
Respond to needs of vulnerable populations	Equity	Capital Operating
Meet sustainability, growth management and economic goals	Economy, Environment	Access Information
Create great places where modes connect	Community, Economy	Special Services
Advance implementation within constraints	Efficiency	

The five proposed evaluation accounts and possible evaluation criteria are listed in Figure 7.

Figure 7: Evaluation Accounts and Possible Evaluation Criteria



At the outset of the evaluation process, no explicit weights will be given to the criteria. Following the initial evaluation, there will be a review to establish consensus on the prioritization of corridors; weights can be added at this point as deemed appropriate. The MAE process stresses evaluation of a complete set of criteria, allowing decision makers to fully consider the implications of decisions regarding prioritization. The evaluation will be both quantitative and qualitative, depending on the level of project development and extent of information available.

The assessment of each criterion will be quantitatively or qualitatively scored using the same methodology described in Figure 5. This approach is intended to counteract the tendency to add scores across accounts and discourages the creation of a "single" value for each corridor, which would negate the rationale for undertaking the multiple account evaluation. In other words, this approach encourages participants to consider how measurable (quantitative or qualitative) outcomes relate to broader city values as well as to one another and discourages overvaluing elements that are easily quantified.

Figure 8 describes evaluation criteria proposed under each account and approaches to measuring individual criterion.

Figure 8: Proposed Multiple Account Evaluation (MAE) Criteria

Measure

Community - Evaluation Criteria

Promotes compact, walkable, neighborhood development	Potential to enhance land development; increase mix of land uses; enhance public spaces	% of corridor with existing or anticipated (2030) transit-supportive zoning  Population density (e.g., > 15 DU/acre)  Employment density (e.g., >15 employees/acre)
Supports Urban Village Strategy	Provides Urban Village Growth Strategy priority connection	Points awarded for important connections; total score based on the sum of connections made, normalized by line distance, e.g., (5) urban center to urban center, (4) urban center to urban village, (3) urban village to urban village, (2) urban center to major generator, (1) urban village to major generator (outside UC or UV)
		(Additional consideration given to identified priorities in the Planning Commission Seattle Transit Communities Report)
	Supports an interconnected network	Holistic review of a corridor in relation to other corridors and transit nodes to promote multidirectional connections to Urban Villages (e.g., corridor connections with routes with 15 minute all day service or better)
Active transportation/human health	Likelihood to increase walking and biking	Pedestrian opportunities in corridor (points awarded to tiers from Pedestrian Master Plan Along and Across Roadway analyses based on GIS analysis within ¼ mile of corridor)
		Bicycle access and demand in corridor (based on analysis completed for Seattle Bicycle Master Plan related to presence of facilities, demand and human health indicators)
Economy - Evaluation Criteria	Measure	Methods
Access to employment	Provides access to area of high job density (current and future)	Number of jobs (2008 and 2030) in corridor catchment (1/4 mile)
Access to employment	<u> </u>	, ,
Access to employment  Ability to shape development/urban form	(current and future)  Commute Trip Reduction affected employers and Transportation Management	catchment (1/4 mile)

Methods

		Secondary screening for:     Estimated potential traffic diversion impacts from lane reductions or transit treatments in parallel corridors     Estimated potential traffic impacts from lane reductions or transit treatments in the subject corridor     Potential for improved traffic flow resulting from a mode shift for general purpose (non-freight) traffic     Curb space impacts (load zones for local deliveries)
Contribution to Center City circulation	Provides service that matches key identified Center City connections  Ability to support the regional transit network (including Link, Sounder and Regional Bus services)	Center City travel connections determined through TMP Market Analysis, scored based on intensity of travel demand  Ability of corridor service to feed and intersect with regional transit nodes/stations
Neighborhood business support/impacts	Increase in access to neighborhood business districts  Impacts on neighborhood business districts served	Aggregate change in transit vehicles and routes converging on a business district from multiple directions/destinations  Qualitative assessment of reduction of general purpose lane capacity providing access to business district; assessment of on-street parking removal required, if any
Social Equity & Environmental Justice - Evaluation Criteria	Measure	Methods
Benefits to vulnerable communities (areas with higher than average concentrations of low income, people with disabilities, and transit dependent people)	Provides service to vulnerable communities	Catchment analysis [1/4 mile] to determine number of low income persons, seniors, and persons with disabilities per lineal mile
Corridor housing and transportation cost	Combined housing and transportation costs in corridor	Use Center for Neighborhood Technology Housing and Transportation Affordability Index (Need to explore data availability)
Access to service sector and living wage jobs	Provides access to areas with high concentrations of service sector and living wage jobs	Number of service sector and living wage jobs (2008 and 2030) in corridor catchment (1/4 mile) –need to ascertain data availability
Environment - Evaluation Criteria	Measure	Methods
CO2 reduction/improvement to air quality	Reduction in per capita vehicle miles travelled and related greenhouse gas and particulate reduction benefits	New transit trips in corridor x average trip length for in-city travel (normalized by population). USEPA standards for CO2 and particulate reductions based on VMT. (This is a proxy measure, not an exact calculation)

Vehicle lifecycle emissions	Measured at modal evaluation level (stage III)	Requires corridor design and vehicle type information not available at this level of evaluation
Efficiency - Evaluation Criteria	Measure	Methods
Constructability	Measured at modal evaluation level (Stage III)	Requires corridor design and mode not available at this level of evaluation
Operating cost	Net change in corridor operating cost	Sketch level assessment of change in operating costs in corridor
Efficiency (Productivity)	Productivity (riders per revenue hour)	Estimated passenger trips per revenue service hour
	Operating cost per ride and per net new rider	Estimated operating cost per ride and per net new rider

**Note:** This is a draft list of criteria. Pending internal review, more exploration of data availability may be needed for some measures.

## **Analysis of Ridership Potential**

Many of the benefits of a transit investment can be tied directly to the amount of ridership the investment generates. Estimates of potential increases to transit ridership will be developed for each corridor evaluated in Stage II to assess performance, cost effectiveness, and other benefits of corridor transit investments. Ridership analysis is an important element of many criteria and will also be used in Stage III. The Stage II analysis will use 2008 and 2030 land use conditions; however, if desired, this stage could also provide an opportunity to test alternative futures related to land use or fossil fuel price (e.g., what if land use allocations vary from projected).

Nelson\Nygaard will use a GIS-based ridership model to assess potential change in ridership in each corridor. The model will consider factors such as the following:

- A network analysis that assigns zone-to-zone trips from the Seattle travel demand model to trips made within the corridor
- Existing transit ridership in the corridor
- Transit system connectivity
- Transit use propensity index (buffer analysis)
- 2030 land use density (population and employment)
- Pedestrian quality and accessibility (where improvements are planned along and across the roadway based on Seattle's Pedestrian Master Plan)
- Service quality (frequency and connections)

Consistent assumptions about transit level of service will be used to ensure corridors are compared equally, and a simplified version of the ridership model will be used for comparative analysis. Mode and service quality will be held equal for all corridors in Stage II. In the Stage III analysis, mode and service characteristics will be evaluated in greater detail.

## Stage III Analysis

Stage III analysis is split in two tracks based the results of Stage II corridor prioritization:

- Stage III(a): Evaluation of mode options and more detailed alignment considerations for up to five top tier corridors.
- Stage III(b): Evaluation of speed and reliability capital improvement opportunities and service enhancements for up to ten second tier corridors, assuming no change in mode of delivery.

# Stage III(a): Mode and Alignment Evaluation

The intent of the modal evaluation is to determine one or more viable transit modes for each top tier corridor and assess corridor performance relative to other corridors. The evaluation criteria will be applied to a range of transit modes in these top tier corridors to identify the most promising modes for each corridor. This evaluation will provide data that will be used to (1) prioritize investments within the top tier of corridors, (2) aid in developing a phasing plan, and (3) identify investments that merit more detailed design study following completion of the Transit Master Plan. The range of transit modes that will be considered in each corridor include:

- Light rail
- Bus rapid transit
- Rapid bus
- Streetcar
- Rapid streetcar

Alignment alternatives within each corridor will be introduced in the Stage III(a) evaluation. Sample cross-sections will be developed to represent potential configurations in the street right of way or in elevated or tunnelled configurations. Multiple cross-sections will be used to develop end-to-end costs for the alignment alternatives.

This evaluation will include qualitative and quantitative measures. The evaluation will use information on typical mode applications to assess how those modes would likely function in the selected study corridors in Seattle. Where readily available, the evaluation will use more detailed, Seattle-specific data and findings. A conceptual review of transit network integration within the city and to adjacent communities will be conducted. Representative cross-sections will be developed to support cost, operational, and access analyses.

## **Initial Screening**

An initial screening will determine whether certain modes can be eliminated from the detailed analysis, based upon the following criteria:

- Capacity (capacity needed to meet load standards at projected passenger volumes, headway requirements, cost)
- Constructability (e.g., surface rail may not be feasible due to grade)
- Corridor/neighborhood compatibility (scale and right of way requirements)

• System compatibility (ability to have connected corridors with compatible modes that support seamless and cost-efficient operations and minimize transfers)

### **Detailed Evaluation**

The remaining modal options for each corridor will be evaluated using the following criteria. These criteria are based on modal evaluation criteria identified in the Seattle Transit Plan and the consulting team's experience with similar analyses.

Figure 9: Modal Evaluation Criteria and Measures

Traveller Experience - Evaluation Criteria	Measure	Methods
Speed	Percent proposed fully- or partially- dedicated right of way	Each direction, lineal distance of corridor with fully- or partially dedicated right of way
(Future condition as per cross- sectional designs)	Average estimated speed by modal characteristics and representative cross-sections	Typical design speeds for identified mode, right-of-way design and conceptual stop spacing
Reliability	Percent proposed fully- or partially- dedicated right of way	Each direction, lineal distance of corridor with fully- or partially dedicated right of way
(Future condition as per cross- sectional designs)	Percent intersections w/ reserved right of way or priority	% of corridor intersections with reserved right of way or priority
	Intersection operation	Expected change in corridor/intersection traffic volumes/ operation
Ride quality/comfort	Rail or rubber-tired vehicle; acceleration, deceleration, and rider stability characteristics	Standardized rating for each mode
Access (distance to stop and quality)	Typical stop spacing by modal characteristics (conceptual stop locations identified based on land use, geography, route connections)	Pedestrian conditions and improvement priorities in concept station areas combining across and along analyses from the Pedestrian Master Plan (PMP tiers are used to create the score)
	Pedestrian conditions and improvement priorities	Street connectivity (density) and crosswalk frequency
Traffic impacts	Review whether mode requires its own lane; mode restricts left turns	Based on cross-sectional designs, review whether mode requires its own lane; mode restricts left turns
	Current traffic volume compared to model capacity in corridor	Review of traffic volumes (current and projected) and lane capacity
	Impact of any proposed signal priority treatment	Delay to traffic on cross-streets
	Impact of any proposed reserved rights of way	Reduction in roadway capacity and resultant delay

Land Use/Economic - Evaluation Criteria	Measure	Methods
Ability to shape development/urban form	Same as Stage II	Same as Stage II
Contribution to Center City circulation	Same as Stage II	Same as Stage II
Parking impacts	Typical modal impacts on adjacent parking supply on corridor type (e.g., arterial)	Extent of alignment in business districts with on-street parking; estimated parking removal
Freight and goods movement impacts	Same as Stage II	Same as Stage II
Safety and Security - Evaluation Criteria	Measure	Methods
On- and off-board security	Station and on-board security features associated with mode; fare collection, policing, and security practices associated with each mode	Qualitative ranking based on local, regional, and national practices
Pedestrian/bicycle conflicts and	Pedestrian safety	Same as Stage II
safety	Typical bicycle conflicts by modal characteristics and right of way design options  Conflicts with existing or planned bicycle routes	Qualitative assessment based on potential conflicts with existing or planned bicycle corridors; bicycle volumes in corridor; bicycle corridor crossings; possible route changes or closures required
Financial/Cost - Evaluation Criteria	Measure	Methods
Operating cost	Typical operating cost by mode	Develop sketch level operating plans for corridor
	Operating cost minus fare revenue per boarding	Same as Stage II
Capital cost	Capital cost estimate using typical permile costs for designated cross-sectional designs	Use typical local, regional, and/or national costs based on corridor characteristics (cross-section prototypes developed for TMP)
		Unique order of magnitude cost of bridges, tunnels, and other structures and capital-intensive treatments
Total cost	Annualized operating and capital costs	Operating costs—use sketch level operating plans for corridor
	Annualized operating and capital cost per boarding (per total and per net new boarding)	Capital costs—use FTA spreadsheet(s) and capital costs from conceptual capital costing  Annualize capital costs (20-year period) and combine with annual operating costs

## Stage III(b): Corridor Enhancement Analysis

Stage II corridors that are not identified as top priorities for intermediate or high-capacity service—but remain among the most important transit corridors in the city—will be evaluated to identify potential improvements to speed, reliability, pedestrian/bicycle access, passenger experience, and information.

This analysis will build on the MAE and prioritization of corridors but may vary from corridor to corridor based on identified opportunities or issues. For example, a corridor that has slow average speeds, close stop spacing, and imbalanced boarding at adjacent stops may be a candidate for a detailed stop consolidation analysis. A corridor that has a high incidence of overloading may be a candidate for enhanced service frequency, intelligent transportation systems (ITS) improvements, and/or off-board fare payment.

## **Other TMP Contributions**

The outcomes of the evaluation described in this memo will directly inform other elements of the Transit Master Plan.

# **System Design Options**

The TMP will identify system improvements that maximize the value of investment recommendations, such as the following:

- Route network design options that correspond to priority investments
- Center city transit circulation options
- Supportive projects or systems that are not exclusive to a corridor or route but are critical
  to support the function of the transit system (e.g., branding of best quality service network)
- Designation and management of major transit corridors/streets
- Major transit hub and passenger transfer facility needs
- Design standards for transit facilities and corridors

Corridor-level priorities will be balanced at the system level. The TMP is not a detailed route restructuring study, but it will provide high level analysis of how major corridor investments impact system design and provide opportunities for supportive route restructuring.

### **Performance Measurement and Network Development**

Refinement of performance monitoring and service development guidelines from the 2005 Seattle Transit Plan will be informed by this evaluation and will be derived, in part, from the MAE approach. This will ensure that transit system performance measurement is not purely a technical exercise, but rather is responsive to a full array of desired outcomes. The TMP will provide the City with a set of tools to monitor investments and to update priorities over time. These tools must be readily usable (e.g., not overly data intensive or technical) in order to ensure that they can play a role in directing the City on how changes in corridor conditions impact service and capital priorities.